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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,276	01/02/2002	Shaun Pendo	047711-0280	6820

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EXAMINER

CROSS, LATOYA I

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/038,276

Applicant(s)

PENDO ET AL.

Examiner

LaToya I. Cross

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 15-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 29 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-30 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/2003; 07/2002
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

Applicants' IDS filed on July 30, 2002 and January 23, 2003 have been considered by the examiner. The IDS filed on January 23, 2003 contains an entry for a PCT Search report. This entry has been lined through because such is not printed on an issued patent.

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-14, 29 and 30, drawn to a sensing apparatus, classified in class 422, subclass 82.01.
 - II. Claims 15-28, drawn to a method for forming an hermetically sealed substrate, classified in class 29, subclass 852.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the process does not necessarily have to be used to form a sensing apparatus. The process may be used to form a semiconductor device.
3. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Ted Rittmaster on June 3, 2004 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-14, 29 and

30. Affirmation of this election must be made by applicant in replying to this Office action.

Claims 15-28 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, 6-8, 10-13, 29 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,498,043 to Schulman et al.

Schulman et al teach a substrate sensor comprising electronic circuitry formed on opposite sides of a substrate. Figure 3B shows a sensor comprising circuitry (38) on one side of a substrate (36) and a sensor (44) on the other side of substrate (36) (col. 3, lines 21-33). Schulman et al teach that the electrodes are connected to the sensor by way of stair-stepped vias that pass through the substrate (col. 2, lines 38-56). At col. 7, lines 38-41, Schulman et al teach that the vias function as hermetic feedthroughs. The reference further teaches that the

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vias are filled with a conductive material, as recited in claims 2 and 30 (col. 3, lines 41-44).

Further, Schulman teaches that multiple conductors interface with the circuitry on the top side of the substrate using multiple stair step feed throughs, as recited in claim 13 (col. 7, lines 20-29). With respect to claim 6, Shulman et al teach using a ceramic substrate (col. 7, lines 37-38).

Further, the reference teaches that the substrate may be coated with alumina (aluminum oxide), as recited in claim 7 (col. 7, lines 41-42). With respect to claims 8, 10 and 11 the reference teaches covering the sensor (cap 42) with a material such as alumina (col. 3, lines 7-15).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 3, 4, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulman et al in view of US Patent 6,414,835 to Wolf et al.

The disclosure of Schulman et al described above. Schulman et al fail to teach gold as the conductive material to fill the via.

Wolf et al teach implantable medical devices, similar to those disclosed by Schulman et al, having ceramic substrates with sensors and electrodes. Vias (62-68) form conductive paths throughout the substrate. Wolf et al teach the vias may be filled with conductive material such as gold-filled epoxies (col. 9, lines 42-65 and col. 14, line 65 – col. 15, line 3). Further, Wolf et al teach that the vias may be filled by conventional method such as laser cutting, drilling, punching, etc (col. 9, lines 42-50). Wolf et al also teach that the layered substrate may be laminated together. See (col. 10, lines 1-15 and figure 10, step S106).

Because Wolf et al teach the conventional use of gold as a conductive material to fill vias in implantable medical devices, it would have been obvious to one of ordinary skill in the art to use gold-filled material to fill the vias disclosed in Schulman et al to provide a conductive passageway through the ceramic substrate.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schulman '043 in view of US Patent 6,516,808 to Schulman.

The disclosure of Schulman '043 is described above. Schulman '043 differs from the instantly claimed invention in that there is no disclosure of the vias being filled with platinum conductive material.

Schulman '808 teaches an implantable device having a substrate having circuitry and electrically conductive vias. Schulman '808 teaches that the vias are formed of platinum to make the vias hermetic (col. 8, lines 16-29). It would have been obvious to one of ordinary skill in the art to use platinum to fill the vias disclosed in Schulman '043 to form a conductive pathway through the structure that also forms a hermetic seal for the pathway.

Citation of Relevant Prior Art

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

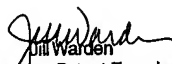
US Patent 5,795,545 to Koripella et al teach a sensor (200) for monitoring exhaust gases. The sensor comprises several layers. One outer layer has electrical contacts (36) and another opposite layer has a sensor element on it. Multiple vias (45) provide electrical contact throughout the layered substrate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaToya I. Cross whose telephone number is 571-272-1256. The examiner can normally be reached on Monday-Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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